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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,803	02/27/2001	Hiroshi Kohda	50212-181	3700

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EXAMINER

VALENCIA, DANIEL E

ART UNIT PAPER NUMBER

2874

DATE MAILED: 01/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,803

Applicant(s)

KOHDA ET AL.

Examiner

Daniel E Valencia

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,4-19,31,37-44 and 2529 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 4-19, 28, 29, 31, 37-41, 43, and 44 is/are allowed.
- 6) ☒ Claim(s) 25 is/are rejected.
- 7) ☒ Claim(s) 26,27 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's communication filed on December 3, 2002 has been carefully studied by the Examiner. The arguments advanced therein, considered together with the amendments made to the claims, are persuasive and most of the rejections based upon prior art made of record in the previous Office Action are withdrawn. In view of the specification as well as the comments in the response, the 35 U.S.C. § 112 rejections have been withdrawn. Many of applicant's claims are now allowable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hotta in view of Dahlgren U.S. Patent No. 4,991,922. Refer to the appropriate drawings or parts of the specification. ~~Hotta as applied above~~ discloses a rotary optical switch with a majority of the claimed limitations of the present invention. Hotta however, fails to mention the method of forming the grooves in the fiber-arraying member of his device.

On the other hand, Dahlgren discloses an optical fiber coupler and method that teaches the method of forming grooves in a fiber-holding member. Regarding claim 25, Dahlgren discloses that grooves in his optical device are produced by repeating the step of linearly moving

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a cutting tool along a predetermined direction (see col. 4, lines 9-10). Dahlgren teaches that it is advantageous to use a rotary cutting tool for producing grooves because it allows the production of a groove that is slightly larger than the fiber itself (see col. 4, lines 9-15). Further, it would be inherent from the structure of the device disclosed by Hotta, that one of ordinary skill could repeatedly form the grooves in base material by rotating and using the cutting tool. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the rotary cutting method disclosed by Dahlgren to form the radial grooves in the device disclosed by Hotta.

Allowable Subject Matter

Claims 26, 27, and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: As to dependent claims 26 and 27, the prior art alone or in combination fails to disclose or render obvious a method forming a fiber arraying member, wherein a rotary cutting tool is used repeatedly to form grooves in a base material having a prism or pyramid shape, respectively.

As to dependent claim 42, the prior art alone or in combination fails to disclose or render obvious a method of forming a fiber arraying member, wherein the circular base material is rotated and a cutting tool is used to repeatedly used to form *v-grooves* therein. Dahlgren teaches the use of a rotary cutting tool for forming arcuate grooves in a base material for holding optical fibers; however, the reference fails to teach the same for forming v-grooves.

Claims 2, 4-19, 28, 29, 31, 37-41, and 43-44 are allowed.

The following is an examiner's statement of reasons for allowance: As to independent claims 4, 5, 7, 11, 12, 15, 37, 40, 41, and 43, the prior art alone or in combination fail to disclose or render obvious an optical fiber arraying member or method wherein the moving side fiber is positioned in one of the corresponding plurality of grooves for the fiber array. For example, Hotta Japanese Patent No. 61185715 A discloses an optical switch comprising: an optical fiber-arraying member in which a plurality of optical fiber fixing grooves; a moving side optical fiber having an end thereof selectively optically connected to either of said plurality of array-side optical fibers; however, the reference does not teach that the moving side fiber is positioned *in respective one of said grooves*. In addition, Morillon French Patent No. 2 634 030 discloses an optical switch similar to the one claimed in claims 5, 7, 12, 15, 37, 40, and 41; however, the reference does not show that the moving side fiber is positionable in a corresponding array side fiber groove.

As to independent claims 28, 29, and 31, the prior art alone or in combination fails to disclose or render obvious a method of producing an optical-fiber-arraying member, comprising a process of alternately repeating plural times a step of forming an optical fiber fixing groove in a predetermined surface of a base material by linearly moving a cutting tool along a radial direction of a virtual circle and a step of rotating said base material and the moving direction of said cutting tool relative to each other by a predetermined angle about a center axis of said

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virtual circle, thereby radially forming a plurality of optical fiber fixing grooves in said base material, wherein the shape of the base material is cylindrical or conical. For example, although the combination of Hotta and Dahlgren would suggest producing an optical fiber arraying member in a base material shaped as a circle, the references do not imply or suggest producing an arraying member of a cylindrical or conical shape.

~~Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."~~

Conclusion

Applicant's arguments filed December 3, 2002, regarding claim 25 have been fully considered but they are not persuasive.

Examiner acknowledges that in Non-Final Rejection mailed September 3, 2002 (paper No. 11), rejection of claim 25 ^{inadvertently} stated that the Dahlgren reference disclosed forming of V-grooves. However, the grooves being of "v-groove" shape is not a limitation in independent claim 25, therefore the rejection is still deemed proper. Claim 41, containing the limitation of "v-shape" groove has been objected as being allowable.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E Valencia whose telephone number is (703)-305-4399. The examiner can normally be reached on Monday-Friday 9:30-6:00.

The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-7724 for regular communications and (703)-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.



dv
January 15, 2003

